UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,631	11/21/2003	Arnis E. Peters	01-1668-E	3462

20306 7590 11/10/2009

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE
32ND FLOOR
CHICAGO, IL 60606

EXAMINER	
AUSTIN, AARON	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
11/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/719,631	PETERS ET AL.	
	Examiner	Art Unit	
	AARON S. AUSTIN	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13 and 27-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13 and 27-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 March 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer (EP1044779A1) in view of Sweeny (EP 0376010 A2) and Stickling (EP0607968A1), and further in view of Luch (U.S. Patent No. 4,429,020), Tanikita et al. (U.S. Patent No. 5,833,889), Grefenstein et al. (WO01/00382-International Application No. PCT/EP00/05755, U.S. equivalent: Patent Application Publication No. 2006/0029809), and Terada et al. (US 5,180,629).

Bauer teaches an indication part wherein the product comprises an aluminum insert 4,5 with a first and second surface and having a recess/injection mold feature 6 formed therein. A decorative indication-forming resin 2 is injected to form a backing to the insert 4,5 with a feature formed in and above the cavity (Fig. 10).

Regarding the thickness of the metal sheet, Sweeny teaches an automotive quality, laminate article and method of production thereof (abstract). The article comprises pre-shaped metal veneers and inner substrates formed in situ and bonded to the inner surface of the veneers (column 3, lines 1-16). The metal may be aluminum (column 4, line 1) and may have an exemplary thickness of 0.025 inches or .015 inches

(Examples 1 and 2). The substrate is formed of resins such as polyester, epoxy, phenolic, and the like and may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). Therefore, as Sweeny clearly teaches thicknesses of 0.025 inches or 0.015 inches are appropriate for automobile trim piece inserts, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose a thickness for the metal layer as taught by Sweeny in forming the taught trim insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the thickness of the resin layer, Bauer does not specifically teach the resin layer as having a thickness of no greater than 2.5 mm.

Stickling teaches adding stability to a blank part by including a reinforcing layer on both the front and the back of the blank part. An appropriate thickness for increased stabilization of the blank part is 0.3 to 3 mm (page 6, lines 3-8). Therefore, as Stickling clearly teaches adding front and back skin layers in a thickness of 0.3 to 3 mm to a blank part provides the advantage of increased stability, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer with a thickness as taught by Stickling to increase stability of the insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness and glass fiber content for the intended

application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the glass fibers, Bauer does not teach the resin layer as a glass filled resin layer including glass fibers as claimed.

Sweeny teaches resins such as polyester, epoxy, phenolic, and the like may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). These resins can be easily molded and bonded to metal (column 4, lines 15-20). Sweeny does not teach the glass filled resin as being a nylon resin. Sweeny et al. teach the resin may be glass filled and may be selected from polyester, epoxy, phenolic, and the like, as noted above (column 4, line 23). Polyamides are included as like polymers to polyesters, etc. as used in metal polymer composites for use as automobile trimmings (see the abstract of U.S. Patent No. 4,429,020 to Luch). Therefore it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer taught by Bauer in view of Sweeny et al. of a glass filled nylon resin for ease of molding and bonding to the metal insert.

Regarding the claimed amount of glass fiber, Bauer in view of Sweeny does not teach the amount of glass fibers by weight used as the reinforcement fibers of the polymer.

Tanikita et al. teach a lamp reflector for automobiles (column 5, lines 24-25) including a base resin to which aluminum is applied containing 30 wt% of glass fibers

(column 4, lines 49-50). The resin may be a polyamide (of which nylon is an example) (column 3, line 24). Therefore, as Tanikita et al. clearly teach a resin containing 30% by weight of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Bauer in view of Sweeny in an amount of 30 wt%.

Likewise, Grefenstein et al. teach a backmolded polymer molding for use in the automotive sector, such as for trim (paragraphs [0017] and [0108] of U.S. equivalent) comprising a backmolded fiber reinforced thermoplastic having a fiber content of from 5 to 30 wt%, such as glass fiber (paragraphs [0014], [0016] and [105] of U.S. equivalent). Thermoplastic polymers include polyamides of which nylon is an example. Therefore, as Grefenstein et al. clearly teach a thermoplastic resin containing 5 to 30 wt% of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Bauer in view of Sweeny in an amount of 5 to 30 wt%.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the coefficients of thermal expansion, Bauer does not teach the coefficients of thermal expansion of the components. However, the claimed physical

property of "similar" coefficients of thermal expansion for the metal sheet and resin layer is expected to be as claimed as like materials to those claimed are used in a like manner. More particularly, the obviousness of an aluminum metal sheet and a polyamide such as nylon is provided for above. As these materials are the same as taught by Applicant, the coefficients of thermal expansion of the materials are expected to be "similar" as claimed.

In the alternative, Terada et al. teach an injection-molded article for automotive trim parts comprising a polymer part bonded to a metal part. The polymer is specifically chosen to have a lower coefficient of linear expansion to better match the coefficient of linear expansion of the materials (column 2, lines 10-31). Therefore, as Terada et al. clearly teach it is important in automotive applications to provide polymers with coefficients of linear expansion that are similar to that of the metal they are bonded in order to provides better alignment of the components during temperature change (column 2, lines 10-31), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to select a polymer which has a similar coefficient of expansion to the metal to which it is bonded. More particularly, it would be obvious to one of ordinary skill in the art to select materials whose coefficients of thermal expansion are similar as dissimilar values would result in differing reactions to temperature change leading to development of cracking, bowing, or other flaws in the components when subjected to the typical temperature changes experienced by a trim piece.

Please note, the claims contain product by process language. The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113.

Regarding claim 13, the metal insert of Bauer may be formed of aluminum.

Regarding claim 28, Sweeny teaches adhesion of the metal to the substrate may be improved through use of metal pretreatments or promoters (columns 4 lines 35-53). Therefore, as Sweeny clearly teaches that an adhesive between a metal layer and a resin provides the advantage of improved adhesion, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use an adhesive to increase adhesion between the metal and resin components.

Regarding claim 29, Sweeny teaches an automotive quality, laminate article comprising pre-shaped aluminum metal veneers which may have an exemplary

thickness of 0.025 inches or .015 inches (Examples 1 and 2). Stickling teaches adding stability to a blank part by including a reinforcing layer with an appropriate thickness of 0.3 to 3 mm (.012 to .12 inches) (page 6, lines 3-8). Using these thicknesses as guidance for determining the thickness of the parts of Bauer as described above, the combined thickness of trim piece (the insert as described above and the backing layer) overlaps the claimed range.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 13 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweeny (EP 0376010 A2) in view of Stickling (EP0607968A1), and further in view of Luch (U.S. Patent No. 4,429,020), Tanikita et al. (U.S. Patent No. 5,833,889), Grefenstein et al. (WO01/00382-International Application No. PCT/EP00/05755, U.S. equivalent: Patent Application Publication No. 2006/0029809), and Terada et al. (US 5,180,629).

Sweeny teaches an automotive quality, laminate article and method of production thereof (abstract). The article comprises pre-shaped metal veneers and inner substrates formed in situ and bonded to the inner surface of the veneers (column 3, lines 1-16). The metal may be aluminum (column 4, line 1) and may have an exemplary thickness of 0.025 inches or .015 inches (Examples 1 and 2). The substrate is formed

of resins such as polyester, epoxy, phenolic, and the like and may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). Adhesion of the metal to the substrate may be improved through use of metal pretreatments or promoters (columns 4 lines 35-53).

Regarding the thickness of the resin layer, Sweeny does not specifically teach the resin layer as having a thickness of no greater than 2.5 mm.

Stickling teaches adding stability to a blank part by including a reinforcing layer on both the front and the back of the blank part. An appropriate thickness for increased stabilization of the blank part is 0.3 to 3 mm (page 6, lines 3-8). Therefore, as Stickling clearly teaches adding front and back skin layers in a thickness of 0.3 to 3 mm to a blank part provides the advantage of increased stability, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer with a thickness as taught by Stickling to increase stability of the insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness and glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the glass fibers, Sweeny teaches resins such as polyester, epoxy, phenolic, and the like may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). These resins can be easily molded and bonded to metal (column 4, lines 15-20). Sweeny does not teach the glass

filled resin as being a nylon resin. Sweeny et al. teach the resin may be glass filled and may be selected from polyester, epoxy, phenolic, and the like, as noted above (column 4, line 23). Polyamides are included as like polymers to polyesters, etc. as used in metal polymer composites for use as automobile trimmings (see the abstract of U.S. Patent No. 4,429,020 to Luch). As polyamides are the same polymer used by Applicant to form the resin layer, the taught resin layer of Sweeny is considered the equivalent of the resin layer claimed.

Regarding the claimed amount of glass fiber, Sweeny does not teach the amount of glass fibers by weight used as the reinforcement fibers of the thermoplastic polymer.

Tanikita et al. teach a lamp reflector for automobiles (column 5, lines 24-25) including a base resin to which aluminum is applied containing 30 wt% of glass fibers (column 4, lines 49-50). The resin may be a polyamide (of which nylon is an example) (column 3, line 24). Therefore, as Tanikita et al. clearly teach a resin containing 30% by weight of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Sweeny in an amount of 30 wt%.

Likewise, Grefenstein et al. teach a backmolded polymer molding for use in the automotive sector, such as for trim (paragraphs [0017] and [0108] of U.S. equivalent) comprising a backmolded fiber reinforced thermoplastic having a fiber content of from 5 to 30 wt%, such as glass fiber (paragraphs [0014], [0016] and [105] of U.S. equivalent). Thermoplastic polymers include polyamides of which nylon is an example. Therefore,

as Grefenstein et al. clearly teach a thermoplastic resin containing 5 to 30 wt% of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Sweeny in an amount of 5 to 30 wt%.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the coefficients of thermal expansion, Sweeny does not teach the coefficients of thermal expansion of the components. However, the claimed physical property of "similar" coefficients of thermal expansion for the metal sheet and resin layer is expected to be as claimed as like materials to those claimed are used in a like manner. More particularly, the obviousness of an aluminum metal sheet and a polyamide such as nylon is provided for above. As these materials are the same as taught by Applicant, the coefficients of thermal expansion of the materials are expected to be "similar" as claimed.

In the alternative, Terada et al. teach an injection-molded article for automotive trim parts comprising a polymer part bonded to a metal part. The polymer is specifically chosen to have a lower coefficient of linear expansion to better match the coefficient of linear expansion of the materials (column 2, lines 10-31). Therefore, as Terada et al. clearly teach it is important in automotive applications to provide polymers with coefficients of linear expansion that are similar to that of the metal they are bonded in

order to provides better alignment of the components during temperature change (column 2, lines 10-31), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to select a polymer which has a similar coefficient of expansion to the metal to which it is bonded. More particularly, it would be obvious to one of ordinary skill in the art to select materials whose coefficients of thermal expansion are similar as dissimilar values would result in differing reactions to temperature change leading to development of cracking, bowing, or other flaws in the components when subjected to the typical temperature changes experienced by a trim piece.

Please note, the claims contain product by process language. The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113.

Regarding claim 13, a pre-shaped aluminum sheet is taught (Example 1).

Regarding claim 28, Sweeny teaches adhesion of the metal to the substrate may be improved through use of metal pretreatments or promoters (columns 4 lines 35-53). Therefore, as Sweeny clearly teaches that an adhesive between a metal layer and a resin provides the advantage of improved adhesion, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use an adhesive to increase adhesion between the metal and resin components.

Regarding claim 29, Sweeny teaches an automotive quality, laminate article comprising pre-shaped aluminum metal veneers which may have an exemplary thickness of 0.025 inches or .015 inches (Examples 1 and 2). Stickling teaches adding stability to a blank part by including a reinforcing layer with an appropriate thickness of 0.3 to 3 mm (.012 to .12 inches) (page 6, lines 3-8). Using these thicknesses as guidance for determining the thickness of the parts of Bauer as described above, the combined thickness of trim piece (the insert as described above and the backing layer) overlaps the claimed range.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 13 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekido (JP55003972A) in view of Bauer (EP1044779A1), Sweeny (EP 0376010

A2), and Stickling (EP0607968A1), and further in view of Luch (U.S. Patent No. 4,429,020), Tanikita et al. (U.S. Patent No. 5,833,889), Grefenstein et al. (WO01/00382-International Application No. PCT/EP00/05755, U.S. equivalent: Patent Application Publication No. 2006/0029809), and Terada et al. (US 5,180,629).

Sekido teaches injection molding of a patterned mold wherein the product comprises a preformed insert 1 with a first and second surface and having a space formed therein for reception of a resin layer. A decorative resin 11 is applied by injection molding as a backing (it overlies the back of at least portions of the insert 1) to the preformed insert 1 and to fill the space formed therein with a decorative feature 2 (Fig. 8). The feature may be flush with the insert 1 (Fig. 8) or protrude above the insert 1 (Fig. 12).

Regarding the metal insert, Bauer teaches an aluminum metal insert for use in a method substantially similar to that taught by Sekido as outlined above. More particularly, the metal insert includes a hole through with injection molded resin applied to the back of the insert escapes to form a trim piece with a resin feature. Therefore, as Bauer clearly teaches inserts of aluminum metal are suitable for use in injection molding to form a decorative trim piece, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the insert of Sekido of aluminum metal. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the insert of metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125

USPQ 416. In particular, as automobile trim pieces typically include both metal and plastic parts, it would be obvious to one of ordinary skill in the art at the time of the claimed invention to form the trim piece of Sekido of aluminum metal.

Regarding the thickness of the metal sheet, Sweeny teaches an automotive quality, laminate article and method of production thereof (abstract). The article comprises pre-shaped metal veneers and inner substrates formed in situ and bonded to the inner surface of the veneers (column 3, lines 1-16). The metal may be aluminum (column 4, line 1) and may have an exemplary thickness of 0.025 inches or .015 inches (Examples 1 and 2). The substrate is formed of resins such as polyester, epoxy, phenolic, and the like and may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). Therefore, as Sweeny clearly teaches thicknesses of 0.025 inches or 0.015 inches are appropriate for automobile trim piece inserts, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose a thickness for the metal layer as taught by Sweeny in forming the taught trim insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the thickness of the resin layer, Stickling teaches adding stability to a blank part by including a reinforcing layer on both the front and the back of the blank part. An appropriate thickness for increased stabilization of the blank part is 0.3 to 3

mm (page 6, lines 3-8). Therefore, as Stickling clearly teaches adding front and back skin layers in a thickness of 0.3 to 3 mm to a blank part provides the advantage of increased stability, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer with a thickness as taught by Stickling to increase stability of the insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness and glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the glass fibers, Sekido does not teach the resin layer as a glass filled resin layer including glass fibers as claimed.

Sweeny teaches resins such as polyester, epoxy, phenolic, and the like may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). These resins can be easily molded and bonded to metal (column 4, lines 15-20). Sweeny does not teach the glass filled resin as being a nylon resin. Sweeny et al. teach the resin may be glass filled and may be selected from polyester, epoxy, phenolic, and the like, as noted above (column 4, line 23). Polyamides are included as like polymers to polyesters, etc. as used in metal polymer composites for use as automobile trimmings (see the abstract of U.S. Patent No. 4,429,020 to Luch). Therefore it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer taught by Sekido in view

of Sweeny et al. of a glass filled nylon resin for ease of molding and bonding to the metal insert.

Regarding the claimed amount of glass fiber, Sekido in view of Sweeny does not teach the amount of glass fibers by weight used as the reinforcement fibers of the polymer.

Tanikita et al. teach a lamp reflector for automobiles (column 5, lines 24-25) including a base resin to which aluminum is applied containing 30 wt% of glass fibers (column 4, lines 49-50). The resin may be a polyamide (of which nylon is an example) (column 3, line 24). Therefore, as Tanikita et al. clearly teach a resin containing 30% by weight of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Sekido in view of Sweeny in an amount of 30 wt%.

Likewise, Grefenstein et al. teach a backmolded polymer molding for use in the automotive sector, such as for trim (paragraphs [0017] and [0108] of U.S. equivalent) comprising a backmolded fiber reinforced thermoplastic having a fiber content of from 5 to 30 wt%, such as glass fiber (paragraphs [0014], [0016] and [105] of U.S. equivalent). Thermoplastic polymers include polyamides of which nylon is an example. Therefore, as Grefenstein et al. clearly teach a thermoplastic resin containing 5 to 30 wt% of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed

invention to include the glass fiber filler of Bauer in view of Sweeny in an amount of 5 to 30 wt%.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the coefficients of thermal expansion, Sekido does not teach the coefficients of thermal expansion of the components. However, the claimed physical property of "similar" coefficients of thermal expansion for the metal sheet and resin layer is expected to be as claimed as like materials to those claimed are used in a like manner. More particularly, the obviousness of an aluminum metal sheet and a polyamide such as nylon is provided for above. As these materials are the same as taught by Applicant, the coefficients of thermal expansion of the materials are expected to be "similar" as claimed.

In the alternative, Terada et al. teach an injection-molded article for automotive trim parts comprising a polymer part bonded to a metal part. The polymer is specifically chosen to have a lower coefficient of linear expansion to better match the coefficient of linear expansion of the materials (column 2, lines 10-31). Therefore, as Terada et al. clearly teach it is important in automotive applications to provide polymers with coefficients of linear expansion that are similar to that of the metal they are bonded in order to provides better alignment of the components during temperature change (column 2, lines 10-31), it would have been obvious to one of ordinary skill in the art at

the time of the claimed invention to select a polymer which has a similar coefficient of expansion to the metal to which it is bonded. More particularly, it would be obvious to one of ordinary skill in the art to select materials whose coefficients of thermal expansion are similar as dissimilar values would result in differing reactions to temperature change leading to development of cracking, bowing, or other flaws in the components when subjected to the typical temperature changes experienced by a trim piece.

Please note, the claims contain product by process language. The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113.

Regarding claim 13, the metal insert of Sekido in view of Bauer may be formed of aluminum as set forth above.

Regarding claim 28, Sweeny teaches adhesion of the metal to the substrate may be improved through use of metal pretreatments or promoters (columns 4 lines 35-53). Therefore, as Sweeny clearly teaches that an adhesive between a metal layer and a resin provides the advantage of improved adhesion, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use an adhesive to increase adhesion between the metal and resin components.

Regarding claim 29, Sweeny teaches an automotive quality, laminate article comprising pre-shaped aluminum metal veneers which may have an exemplary thickness of 0.025 inches or .015 inches (Examples 1 and 2). Stickling teaches adding stability to a blank part by including a reinforcing layer with an appropriate thickness of 0.3 to 3 mm (.012 to .12 inches) (page 6, lines 3-8). Using these thicknesses as guidance for determining the thickness of the parts of Sekido as described above, the combined thickness of trim piece (the insert as described above and the backing layer) overlaps the claimed range.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 13 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayumi (JP57140114A), in view of Bauer (EP1044779A1), Sweeny (EP 0376010 A2), and Stickling (EP0607968A1), and further in view of Luch (U.S. Patent No.

4,429,020), Tanikita et al. (U.S. Patent No. 5,833,889), Grefenstein et al. (WO01/00382-International Application No. PCT/EP00/05755, U.S. equivalent: Patent Application Publication No. 2006/0029809), and Terada et al. (US 5,180,629).

Mayumi teaches injection molding of an indication part wherein the product comprises an insert 10 with a first and second surface and having a through hole/injection mold feature 12 formed therein. A decorative indication-forming resin is applied as a backing to the insert 10 with a feature 15 formed in and above the cavity (Fig. 10).

Regarding the metal insert, Bauer teaches an aluminum metal insert for use in a method substantially similar to that taught by Mayumi as outlined above. More particularly, the metal insert includes a hole through with injection molded resin applied to the back of the insert escapes to form a trim piece with a resin feature. Therefore, as Bauer clearly teaches inserts of aluminum metal are suitable for use in injection molding to form a decorative trim piece, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the insert of Mayumi of aluminum metal. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the insert of metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. *In re Leshin*, 125 USPQ 416. In particular, as automobile trim pieces typically include both metal and plastic parts, it would be obvious to one of ordinary skill in the art at the time of the claimed invention to form the trim piece of Mayumi of aluminum metal.

Regarding the thickness of the metal sheet, Sweeny teaches an automotive quality, laminate article and method of production thereof (abstract). The article comprises pre-shaped metal veneers and inner substrates formed in situ and bonded to the inner surface of the veneers (column 3, lines 1-16). The metal may be aluminum (column 4, line 1) and may have an exemplary thickness of 0.025 inches or .015 inches (Examples 1 and 2). The substrate is formed of resins such as polyester, epoxy, phenolic, and the like and may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). Therefore, as Sweeny clearly teaches thicknesses of 0.025 inches or 0.015 inches are appropriate for automobile trim piece inserts, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose a thickness for the metal layer as taught by Sweeny in forming the taught trim insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the thickness of the resin layer, Mayumi does not specifically teach the resin layer as having a thickness of no greater than 2.5 mm.

Stickling teaches adding stability to a blank part by including a reinforcing layer on both the front and the back of the blank part. An appropriate thickness for increased stabilization of the blank part is 0.3 to 3 mm (page 6, lines 3-8). Therefore, as Stickling clearly teaches adding front and back skin layers in a thickness of 0.3 to 3 mm to a

blank part provides the advantage of increased stability, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer with a thickness as taught by Stickling to increase stability of the insert.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thickness and glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the glass fibers, Mayumi does not teach the resin layer as a glass filled resin layer including glass fibers as claimed.

Sweeny teaches resins such as polyester, epoxy, phenolic, and the like may include impregnated fiber materials (column 4, lines 1-27), such as glass filled fiber materials (column 9, line 12). These resins can be easily molded and bonded to metal (column 4, lines 15-20). Sweeny does not teach the glass filled resin as being a nylon resin. Sweeny et al. teach the resin may be glass filled and may be selected from polyester, epoxy, phenolic, and the like, as noted above (column 4, line 23). Polyamides are included as like polymers to polyesters, etc. as used in metal polymer composites for use as automobile trimmings (see the abstract of U.S. Patent No. 4,429,020 to Luch). Therefore it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to form the resin layer taught by Mayumi of a glass filled nylon resin for ease of molding and bonding to the metal insert.

Regarding the claimed amount of glass fiber, Mayumi in view of Sweeny does not teach the amount of glass fibers by weight used as the reinforcement fibers of the polymer.

Tanikita et al. teach a lamp reflector for automobiles (column 5, lines 24-25) including a base resin to which aluminum is applied containing 30 wt% of glass fibers (column 4, lines 49-50). The resin may be a polyamide (of which nylon is an example) (column 3, line 24). Therefore, as Tanikita et al. clearly teach a resin containing 30% by weight of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Mayumi in view of Sweeny in an amount of 30 wt%.

Likewise, Grefenstein et al. teach a backmolded polymer molding for use in the automotive sector, such as for trim (paragraphs [0017] and [0108] of U.S. equivalent) comprising a backmolded fiber reinforced thermoplastic having a fiber content of from 5 to 30 wt%, such as glass fiber (paragraphs [0014], [0016] and [105] of U.S. equivalent). Thermoplastic polymers include polyamides of which nylon is an example. Therefore, as Grefenstein et al. clearly teach a thermoplastic resin containing 5 to 30 wt% of glass fibers provides the advantage of structural reinforcement suitable for automobile trim, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to include the glass fiber filler of Mayumi in view of Sweeny in an amount of 5 to 30 wt%.

Further, it would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the glass fiber content for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding the coefficients of thermal expansion, Mayumi does not teach the coefficients of thermal expansion of the components. However, the claimed physical property of "similar" coefficients of thermal expansion for the metal sheet and resin layer is expected to be as claimed as like materials to those claimed are used in a like manner. More particularly, the obviousness of an aluminum metal sheet and a polyamide such as nylon is provided for above. As these materials are the same as taught by Applicant, the coefficients of thermal expansion of the materials are expected to be "similar" as claimed.

In the alternative, Terada et al. teach an injection-molded article for automotive trim parts comprising a polymer part bonded to a metal part. The polymer is specifically chosen to have a lower coefficient of linear expansion to better match the coefficient of linear expansion of the materials (column 2, lines 10-31). Therefore, as Terada et al. clearly teach it is important in automotive applications to provide polymers with coefficients of linear expansion that are similar to that of the metal they are bonded in order to provides better alignment of the components during temperature change (column 2, lines 10-31), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to select a polymer which has a similar coefficient of expansion to the metal to which it is bonded. More particularly, it would be obvious to

one of ordinary skill in the art to select materials whose coefficients of thermal expansion are similar as dissimilar values would result in differing reactions to temperature change leading to development of cracking, bowing, or other flaws in the components when subjected to the typical temperature changes experienced by a trim piece.

Please note, the claims contain product by process language. The above arguments establish a rationale tending to show the claimed product is the same as what is taught by the prior art. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964,966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113.

Response to Arguments

Applicant's arguments, see the Remarks and amendments, filed 10/17/08, with respect to the objection to and rejections under 35 USC 112 of claim 14 and the rejections over prior art have been fully considered and are persuasive in light of the present amendments. The objection and rejections have been withdrawn.

Applicant's arguments with respect to the rejections over prior art have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON S. AUSTIN whose telephone number is (571)272-8935. The examiner can normally be reached on Monday-Friday: 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aaron S Austin/
Examiner, Art Unit 1794